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PATENT TRADEMARK OFFICE

Docket No.: 6670/1E517US1

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:: Serge KALIAGUINE and Andre VAN NESTE

Serial No.: 09/743,985

Confirmation No.: 1564

Filed: April 9, 2001

For: PROCESS FOR SYNTHESIZING METAL OXIDES AND METAL OXIDES  
HAVING A PEROVSKITE OR PEROVSKITE-LIKE CRYSTAL STRUCTURE

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**RESPONSE TO RESTRICTION AND SPECIES ELECTION REQUIREMENT**

Hon. Commissioner of  
Patents and Trademarks  
Washington, DC 20231

Sir:

Applicants hereby respond to the Office Action mailed August 30,  
2002.

I. **Response to Restriction and Species Election Requirement**

In the Office Action, the Examiner requires restriction of all claims 28-49 to one of the following Groups I - X:

- Group I - claims 28-31, drawn to a method of making a metal oxide;
- Group II - claims 32-39, drawn to a method of making a metal oxide requiring increasing the BET surface area;
- Group III - claims 40 and 43, drawn to a perovskite or perovskite-like metal oxide;
- Group IV - claims 41 and 42, drawn to a brownmillerite;
- Group V - claim 44, drawn to  $\text{LaCoO}_3$ ;
- Group VI - claim 45, drawn to  $\text{CeCuO}_3$ ;
- Group VII - claim 46, drawn to  $\text{YCoO}_3$ ;
- Group VIII - claim 47, drawn to  $\text{LaO} \cdot 6\text{SrO} \cdot 4\text{CoO}_3$ ;
- Group IX - claim 48, drawn to  $\text{LaO} \cdot 6\text{SrO} \cdot 4\text{MnO}_3$ ; and
- Group X - claim 49, drawn to a  $\text{LaO} \cdot 6\text{SrO} \cdot 4\text{CoO} \cdot 8\text{FeO} \cdot 2\text{O}_3$ .

In response to the restriction requirement, applicants elect the Group II claims (claims 32-39), covering a method of making a metal oxide requiring increasing the BET surface area.

The Examiner also requires an election of species of one of the A group elements, one of the B group elements and one of the C group elements,

from the formula  $[(ABO_3-x)_n + CYO_z]$ . The A, B and C species groups are recited in independent claims 28 and 32, as follows:

Species Group A: Al, Y, Na, K, Rb, Cs, Pb, La, Sr, Ba, Cr, Ag, Ca, Pr, Nd, Bi and the elements of the lanthanide series of the periodic table;

Species Group B: Al, Ga, In, Zr, Nb, Sn, Ru, Rh, Pd, Re, Os, Ir, Pt, U, Co, Fe, Ni, Mn, Cr, Ti, Cu, Mg, V, Nb, Ta, Mo and W;

Species Group C: Al, Ga, In, Zr, Nb, Sn, Ru, Rh, Pd, Re, Os, Ir, Pt, U, Co, Fe, Ni, Mn, Cr, Ti, Cu, Mg, V, Nb, Ta, Mo, W, Y, Na, K, Rb, Cs, Pb, La, Sr, Ba, Cr, Ag, Ca, Pr, Nd, Bi and the elements of the lanthanide series of the periodic table.

In response to the species election requirement, applicants elect La for the A group, Co for the B group, and Pt for the C group.

## II. Partial Traversal of Restriction Requirement

Applicants traverse the restriction requirement, and request modification of the restriction requirement to permit prosecution of the subject matter of Groups I and II in this application. It is believed that there is no undue burden on the Examiner to search claim Groups I and II, both of which cover methods of manufacturing metal oxides.

The Examiner has not indicated the particular classes and subclasses which need to be searched for each claim group, and in particular has not

explained how the field of search between Groups I and II will differ. Both the Group I and Group II claims call for a process for mechanosynthesizing a metal oxide having a perovskite or perovskite-like crystal structure and a predetermined stoichiometric content of oxygen. The metal oxide genus required by the Group I and Group II claims is identical. The only difference between the Group I and Group II claims is step (b) of the Group II claims (recited in claim 32), which requires "increasing the BET specific surface area of the metal oxide obtained in step a) by further subjecting said metal oxide to high energy milling to obtain a metal oxide having a high BET specific surface area." The Examiner is requested to explain how the differences between the claims in the process steps require a significant additional searching burden requiring restriction between the Group I and Group II subject matter. In the absence of any such explanation, the Examiner is requested to rejoin the Group I and II subject matter in this application.

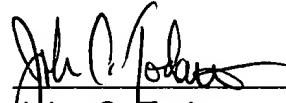
The Examiner is reminded that under M.P.E.P. §803, restriction is not proper "[i]f the search and examination of an entire application can be made without serious burden," regardless of whether the application "includes claims to independent or distinct inventions." Since there is no undue burden on the Examiner to search the subject matter of both Group I and II in this application, modification of the restriction requirement is requested.

In view of the foregoing, the Examiner is requested to modify the restriction requirement to permit examination of Groups I and II in this application.

Favorable action is earnestly solicited.

Respectfully submitted,

Dated: December 10, 2002

  
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